



# OVERVIEW OF THE DEFENSE STANDARDIZATION PROGRAM

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# Statutes on Standardization

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- Public Law 82-436, “Cataloging and Standardization Act”
  - Establishes a Single, Unified Standardization Program in the Department of Defense
  - Requires Standardization of Items Used Throughout DoD to the Highest Degree Practicable
- Public Law 104-113, “National Technology Transfer and Advancement Act”
  - Unless Inconsistent with Law or Impractical, Federal Agencies Should Use Voluntary Consensus Standards
  - Federal Agencies Should Participate in Development of Voluntary Consensus Standards, If Compatible with Agency Mission, Priorities, and Resources

# DoD Policies on Standardization

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- DoD Instruction 4120.24, “Defense Standardization Program”
  - Implements Public Law
  - Assigns Responsibilities for Defense Standardization Program
- DoD Manual 4120.24-M, “Defense Standardization Program Policies and Procedures”
  - Establishes the Operating Rules for the Defense Standardization Program

Secretary of Defense

Under Secretary of Defense (Acquisition, Technology & Logistics)

Director, Defense Research & Engineering

Director, Systems Engineering

Defense Standardization Executive

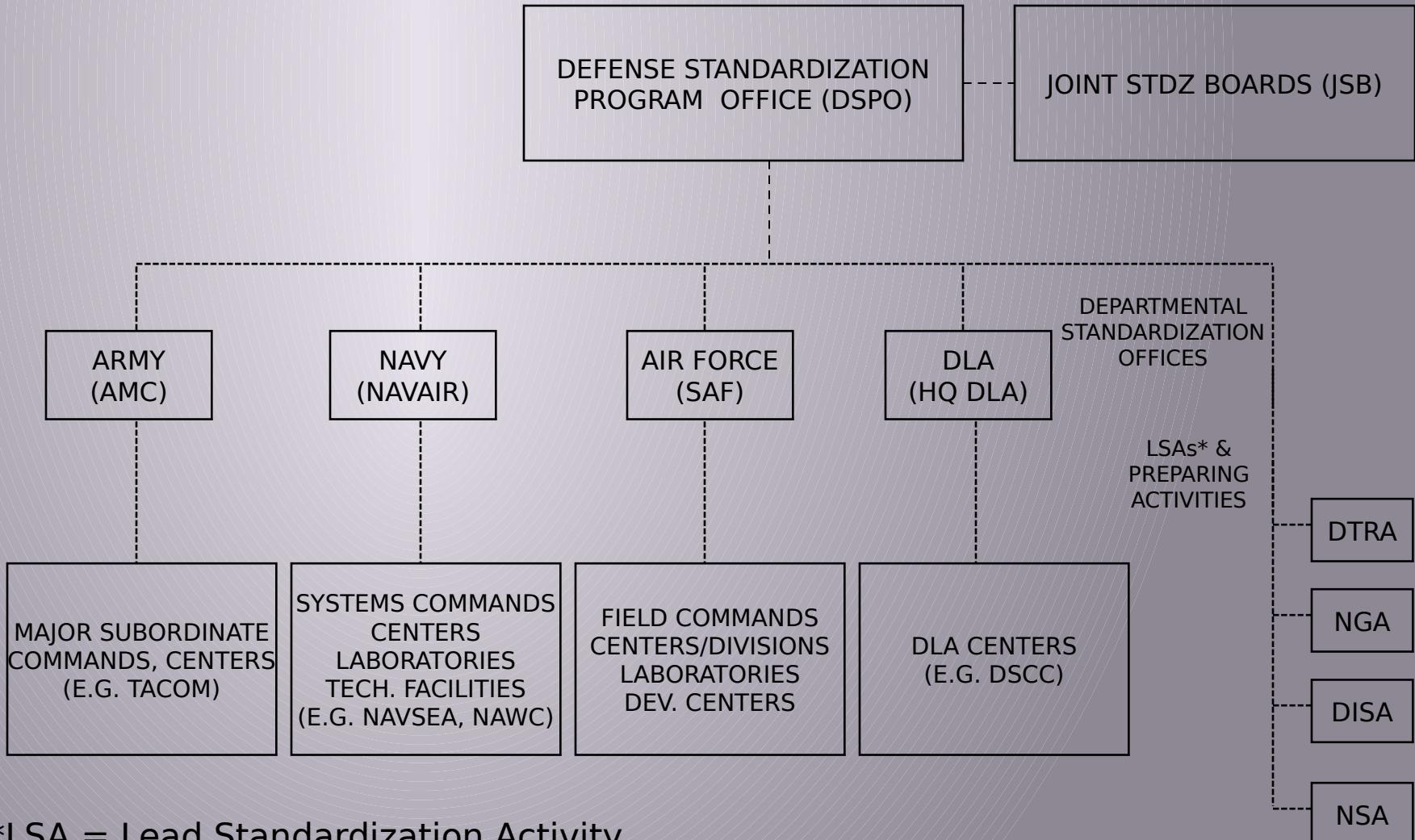
# DoD Standardization Leadership

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# Standardization Policy

## Centralized, but Execution Decentralized



# Joint Standardization Boards

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- Support interoperability and improve logistics readiness by promoting enterprise-wide commonality of systems, components, and architectures
- Current Joint Standardization Boards (JSB)
  - Aerial Refueling Systems
  - Fuze/Initiation Systems
  - Intermodal Equipment
  - Medical Materiel/Equipment
  - Microcircuits and Semiconductors
  - Mobile Electric Power (MEP) Generating Sources
  - Power Source Systems
  - Tactical Rigid Wall, Soft, and Hybrid Shelters
  - Tactical Unmanned Aircraft Systems

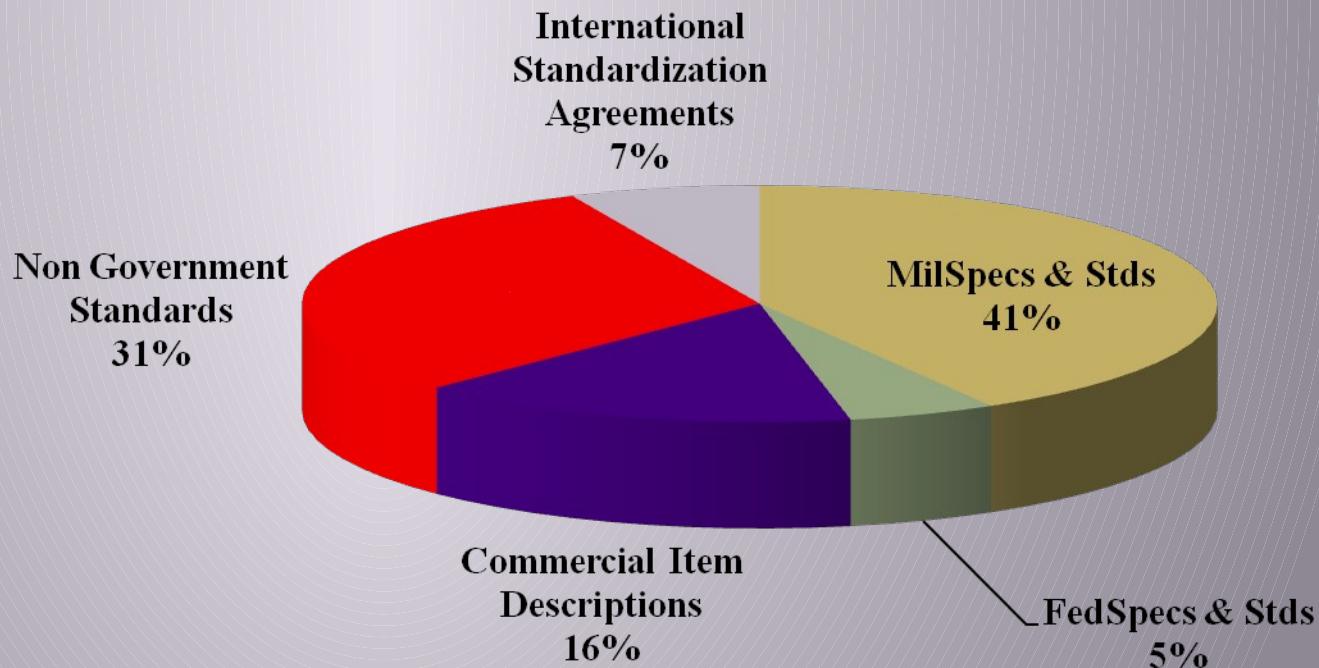
# DoD Relies Heavily on Non-DoD Standards

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- 9000 Adopted Industry Wide Non-Government Standards from 100+ Different Organizations (e.g. AIA, ANSI, ASME, ASTM, IEEE, ISO, SAE, UL)
- Federal Specifications, Standards, & Commercial Item Descriptions (CIDs) (Prepared by Many Federal Agencies, Including DoD)
- International Standardization Agreements (Mostly NATO, but also Air Standards Coordinating Committee, American-British-Canadian-Australian (ABC) Army Standards, and others)

# 1,000s of Commercial and Military Specs/StdS Used in Weapon Systems

(Over 31,000)



## Specs/Stds Are Basic to Weapon System Design, Acquisition, Operation, and Maintenance

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• M-1 Tank	cites	5,762 Specs/Stds
• Apache	cites	8,141 Specs/Stds
• C-5 Galaxy	cites	13,338 Specs/Stds
• F110 Engine	cites	2,468 Specs/Stds
• Tomahawk Missile	cites	1,876 Specs/Stds

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• <b>MIL-F-5509</b>	used on	641 Weapon Systems
▪ Flared Tube Fitting		
• <b>SAE-AMS7276</b>	used on	505 Weapon Systems
▪ High-Temp Low Compression FKM Rubber Fluid Sealing Ring		
• <b>MIL-C-38999</b>	used on	606 Weapon Systems
▪ Quick Disconnect Electrical Connector, Environment Resistant		

## Standardization Creates Benefits

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- Total Life Cycle Systems Management considerations are incorporated through standards and standardization
- Interoperability for Joint and Coalition operations is enabled
- Logistics footprint is reduced
- Reliability, Safety, Availability, Maintainability Increase

# Standardization Achieves Results

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- Life cycle costs were reduced \$80 million dollars by standardizing to reduce parts on the Virginia class submarine from over 100,000 to less than 15,000.
- Weapons systems integration costs are reduced 40% and fielding of new systems accelerated 1-3 years when Air Force developed a universal interface that transforms the armament integration process from a program centric approach to a capabilities based process.
- A standard, commercial low voltage power supply in the Patriot Missile increased potential suppliers to 46, increased Mean Time Between Failure 100-300%, decreased procurement costs 30-40%, decreased Repair costs 90%, and addressed diminishing manufacturing source problems.
- 30,000 NATO troops from NATO nations operate in Afghanistan supported through multiple NATO Standardization Agreements
- Army launched battery standardization effort to reduce the 350 different types of 1.5-volt to 30-volt batteries, many of which were unique. As a result:
  - Number of battery types went from 350 to 35.
  - Army procurement costs dropped from \$100M in 1996 to \$75M in 2001.
  - Materiel readiness improved. Army went from 85% stock availability to 90% battery stock availability.
  - Standardizing on longer-lasting primary and rechargeable batteries resulted in higher unit readiness.

# DSP Challenges/Opportunities

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- Resources to Maintain Currency
  - 9177 documents are 10+ years
  - 2506 documents are 20+ years
  - 392 documents are 30+ years
  - 218 documents are 40+ years
    - MIL-C-7979B, aircraft hydraulic brake cylinders dated 1959
    - MIL-L-8552C, shock absorber landing gears dated 1965
    - MIL-B-16747C, high pressure steam boiler dated 1963
    - MIL-P-17454B, portable centrifugal pump dated 1954

# DSP Challenges/Opportunities

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- Revitalize Systems Engineering-Related Standards Lost Under MilSpec Reform
- Re-emphasize Parts Management
- Ensure Participation on Non-Government Standards Committees Important to DoD
- Make Non-Government Standards Readily Available to DoD Personnel
  - Feb 2009 DSB Report Recommended DoD-wide License

# DSP Challenges/Opportunities

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- Better Compliance with STANAGs to Ensure Interoperability
  - Consider Reinstating Program Manager Tool to Identify Applicable STANAGs
- Make STANAGs Available
  - 2001 NATO Lessons Learned Study and July 2009 European Defense Agency Study Identify as Major Problem
- Make JSBs Pay Off
- Ensure Standards Support DoD Science & Technology Goals

# DSP Challenges/Opportunities

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- Revitalize DoD Item Reduction Program
- Improve Automated Tools
  - Populate Qualified Products Database
  - Modernize GIDEP – Tool for Managing Counterfeit
- Revamp DAU Standards Courses and Transfer to Systems Engineering Functional Board
- Publicize Success

# Standardization's Value is recognized

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essential [to the defense of the Republic] that the same species of arms, instruments, and military apparatus should be introduced in every part of the United States. No one, who has not learned it from experience, can conceive the difficulty, expense, and confusion, which result from a contrary system."  
*General George Washington, 1783*

"American mass production, made possible by standardization, was our number one weapon in World War II." *W. Edwards Deming, "Out of the Crisis"*

Standardization can be a tremendous force multiplier. If the level of standardization is adequate, then the overall efficiency of combined forces will be greater than the sum of individual components."

*Admiral Jan Eriksen, Director, NATO Standardization Agency, "European Affairs," Summer 2002 Issue*